

**ASCE-INDOT  
STRUCTURAL SUBCOMMITTEE  
MEETING NO. 32 MINUTES  
March 16, 2006**

The meeting was called to order at 9:05 am by Steve Weintraut. Those in attendance were:

Tony Uremovich	INDOT, Structural Services
Naveed Burki	INDOT, Structural Services
Greg Klevitsky	INDOT, Structural Services
Keith Hoernschmeyer	Federal Highway Administration
Tony Zander	INDOT, Materials and Tests Division
Mike Obergfell	USI Consultants, Inc.
Mike McCool	Beam Longest & Neff, LLC.
Mike Wenning	American Consulting
Dick O'Connor	RQAW Corporation
Dave McDougall	HNTB Corp
Jason Yeager	Gohman Asphalt Company
Steve Weintraut	Butler, Fairman and Seufert, Inc.
Michael Matel	Butler, Fairman and Seufert, Inc.

In addition to the attendees, these minutes will be sent to the following:

Anne Rearick	INDOT, Structural Services
George Snyder	INDOT, Design Division
Bill Dittrich	INDOT, Program Development
Chris Hill	Prestress Services

A meeting agenda had previously been distributed and the following items were discussed:

1. The November 29, 2005 meeting minutes were approved as written.
2. Due to the current reorganization at INDOT, John Jordan will no longer be a participating member of this subcommittee.
3. Dave McDougall led a lengthy discussion on the topic of precast concrete U-Beam standards. (See Attachment No 1) Dave is currently preparing the preliminary engineering plans for the I-465 project along the Westside of Indianapolis. With this being the first major project in Indiana where precast U-Beams are being proposed, it was felt that it would be very cost beneficial to develop standards that are compatible with the surrounding states. Dave met with Prestress Services, who will be the likely precast concrete supplier of these beams, to obtain their perspective on this issue. Prestress Services pointed out that the outside formwork was the most important issue to the precaster. For the different depths of the beams, the bottom width remained a constant width of 4'-8", which is a standard width among the surrounding states.

When looking at the other states, which have used the precast concrete U-Beam, it was noted that the beams were designed as simple spans. In Texas and Florida, the strands were not draped but only debonding was used. Also it was observed that Colorado and the state of Washington had thicker webs than Texas and Florida. By noting these variations, it became even clearer why Indiana would want to have a standard type section with the neighboring states of Ohio, Michigan, Kentucky, and Tennessee. It was noted that the Kennedy Interchange in Louisville, Kentucky, would

be the first in this area going to bid in August 2006, which would use the precast concrete U-Beams.

Dave mentioned that for the I-465 project, the web thickness was increased from 5'-7½", so the strands could be draped. Attempts were made to increase the 7" top flange thickness to provide more room for top strand placement and avoid draping the strands, but this scheme did not work due to the 25% strand debonding limitation imposed by Indiana. The typical beam spacing, which is being used on the I-465 projects, is approximately 15 feet on center. An access hole for maintenance purposes was provided in the beams as required by INDOT. Three different depth U-Beams are being used depending upon the span.

100-ft Span uses 48" Depth  
120-ft Span uses 54" Depth  
140-ft Span uses 63" Depth

Dave pointed out that when a span exceeds 140 feet, the beam becomes too heavy to ship. Also these U-Beams are not recommended for curved structures or bridges with a large skew.

When compared with the concrete I-Girders, the following advantages of using the U-Beam section were mentioned:

- A) faster construction, since there are fewer beams to erect, and diaphragms are not present between the beams;
- B) easier to transport to the job site;
- C) aesthetics; and
- D) overall cost competitive with the concrete I-girder.

Out of this discussion, the group felt that the current debonding criteria of only allowing 25% of the total number of strands in the bottom portion of the beam to be debonded needed to be investigated. Mike McCool, who will be attending PCI committee meetings in the near future, will try to gather some information on this topic. Steve Weintraut will contact Purdue University about this issue as well. It was also requested that Tony Zander provide an updated version of the lightweight concrete specification at the next meeting.

4. The subject of the contractor pouring the approach slab with the concrete bridge deck was discussed. At the last meeting, it was suggested to increase the depth of the saw cut at the Type 1A joint location from 3 inches to 6 inches to help alleviate the cracks at this location. It was pointed out that the setting time of the concrete is unpredictable, and the contractor is never sure when the right time to saw cut this joint.

John Jordan was going to contact the surrounding states to determine if this concrete cracking problem is occurring. Since John is no longer participating on this subcommittee, Naveed Burki will talk to Anne Rearick to see if this information was obtained. Also, Jason Yeager will look into what type of material could be used along the vertical portion of the pavement ledge.

5. Keith Hoernschmeyer gave a brief overview on the design standards for the rehabilitation of historic bridges on low volume county roads. The three major items that are prevalent in this document were identified as follows:

volume of the roadway;  
capacity of the structure; and  
clear roadway width provided.

Providing numerical values to these items will be the basis of this document. Members of the group felt that the criteria presented in this document should not make it more difficult to replace an existing against structure. It was pointed out that the intent was not to adopt the entire AASHTO Low Volume guide, but for INDOT to only adopt just portions. It was suggested that a minimum clear-roadway width of 20 feet be adopted for structures that are to remain in place. The group suggested that three separate standards be employed as follows:

- A) Rehabilitating historic bridges on low volume roads
- B) Rehabilitating non-historic bridges on low volume roads
- C) Replacing non-historic bridges on low volume roads

The next meeting for the INDOT Structural Subcommittee is scheduled for 9:00 am on July 6, 2006, at the INDOT 6<sup>th</sup> Floor Conference Room.

This meeting was adjourned at 11:30AM.

Respectfully submitted,  
BUTLER, FAIRMAN and SEUFERT, INC.

Michael Matel, P.E.  
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Attachments

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